AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (CURRENTLY AMENDED) An image data retouching apparatus for determining the characteristic of each picture element in image data which express images in a dot matrix form in multiple tones and retouching each picture element in a way appropriate to its characteristic, said apparatus comprising:

an image data acquisition unit which acquires said image data;

a picture element characteristic determining unit which ~~creates a distribution of~~determines differences of tone levels between object picture elements, which are the picture elements of the image data acquired by said image data acquisition unit, and neighboring picture elements in a prescribed range around the object picture elements, creates a distribution of said differences and determines the characteristic of each object picture element by comparing the distribution of differences with a model distribution; and

an image data retouching unit which executes prescribed image processing according to the characteristic of picture elements determined by said picture element characteristic determining unit,

wherein said distribution of differences is created by placing each of said differences, respectively, in one of a plurality of predetermined categories, and

wherein said picture element characteristic determining unit utilizes, for determination of the characteristic of each object picture element, the positive or negative polarization of said distribution.

2. (ORIGINAL) An image data retouching apparatus, as claimed in Claim 1, wherein said picture element characteristic determining unit utilizes for determination the distribution in a range of smaller differences and the distribution in a range of greater differences.

3. (Canceled)

4. (PREVIOUSLY PRESENTED) An image data retouching apparatus, as claimed in Claim 2, wherein said picture element characteristic determining unit determines picture elements to be edge picture elements if the distribution in said range of greater differences is dominant and if said distribution is polarized positively or negatively.

5. (PREVIOUSLY PRESENTED) An image data retouching apparatus, as claimed in Claim 1, wherein said image data retouching unit executes sharpening of images if said object picture elements are determined to be edge picture elements.

6. (ORIGINAL) An image data retouching apparatus, as claimed in Claim 5, wherein said sharpening forms a matrix having a prescribed number of picture elements centering on an object picture element and is executed by a sharpening filter wherein a prescribed coefficient to emphasize the object picture element is set in each picture element position in the matrix.

7. (PREVIOUSLY PRESENTED) An image data retouching apparatus, as claimed in Claim 2, wherein said picture element characteristic determining unit determines picture elements to be moiré picture elements if the distribution in said range of smaller differences is dominant and if said distribution is polarized positively or negatively.

8. (PREVIOUSLY PRESENTED) An image data retouching apparatus, as claimed in Claim 1, wherein said image data retouching unit executes smoothing of images if said object picture elements are determined to be moiré picture elements.

9. (ORIGINAL) An image data retouching apparatus, as claimed in Claim 8, wherein said smoothing forms a matrix having a prescribed number of picture elements centering on an object picture element and is executed by a smoothing filter wherein prescribed coefficients are set to roughly average said object picture elements in different picture element positions in the matrix.

10. (PREVIOUSLY PRESENTED) An image data retouching apparatus, as claimed in Claim 1, wherein said image data retouching unit obtains a retouching value for the luminance value of said image data, and adds the retouching value to the tone values of element colors to retouch the image data.

11. (PREVIOUSLY PRESENTED) An image data retouching apparatus, as claimed in Claim 1, wherein:

in retouching the image data of the picture elements, an image data attribute specifying unit for acquiring specification of the attribute of image data to be handled is caused to execute the function thereof, and

said image data retouching unit is caused to execute the function thereof on the basis of the image data having the attribute acquired by said image data attribute specifying unit.

12. (PREVIOUSLY PRESENTED) An image data retouching apparatus, as claimed in Claim 11, wherein said image data attribute specifying unit specifies luminance signals as the attribute when high-speed image data retouching is desired and specifies element color signals constituting an image as the attribute when high-quality image data retouching is desired.

13. (CURRENTLY AMENDED) An image data retouching method for determining the characteristic of each picture element in image data which express images in a dot matrix form in multiple tones and retouching each picture element in a way appropriate to its characteristic, said method comprising:

an image data acquisition step to acquire said image data;

a picture element characteristic determining step to determine ~~a distribution of~~ differences of tone levels between object picture elements, which are the picture elements of the image data acquired by said image data acquisition step, and neighboring picture elements in a prescribed range around the object picture elements, a distribution of said differences and ~~determining~~ the characteristic of each object picture element by comparing the distribution of differences with a model distribution; and

an image data retouching step to execute prescribed image processing according to the characteristic of picture elements determined by said picture element characteristic determining step,

wherein said distribution of differences is created by placing each of said differences, respectively, in one of a plurality of predetermined categories, and

wherein said picture element characteristic determining step utilizes, for determination of the characteristic of each object picture element, the positive or negative polarization of said distribution.

14. (CURRENTLY AMENDED)A computer readable medium on which is recorded an image data retouching program for determining the characteristic of each picture element in image data which express images in a dot matrix form in multiple tones and retouching each picture element in a way appropriate to its characteristics, said program comprising:

an image data acquisition function to acquire the image data;

a picture element characteristic determining function to determine ~~a distribution of~~ differences of tone levels between object picture elements, which are the picture elements of the image data acquired by said image data acquisition function, and neighboring picture elements in a prescribed range around the object picture elements, a distribution of said differences and determine the characteristic of each object picture element by comparing the distribution of differences with a model distribution; and

an image data retouching function to execute prescribed image processing according to the characteristic of picture elements determined by said picture element characteristic determining function,

wherein said distribution of differences is created by placing each of said differences, respectively, in one of a plurality of predetermined categories, and

wherein said picture element characteristic determining function utilizes, for determination of the characteristic of each object picture element, the positive or negative polarization of said distribution.